



## DEPARTMENT OF TRANSPORTATION MATERIALS TRANSPORTATION BUREAU

WASHINGTON, D.C. 20590

53824

[ 49 CFR Parts 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189]

[Docket No. HM-145]

### ENVIRONMENTAL AND HEALTH EFFECTS MATERIALS

#### Advance Notice of Proposed Rulemaking

In issuing this advance notice of proposed rulemaking, the Materials Transportation Bureau (MTB) is giving notice that it is considering whether new or additional transportation controls are necessary for classes of materials presenting certain hazards to humans and to the environment and which are not generally subject to the existing Hazardous Materials Regulations (HMR). The MTB is particularly interested in receiving views on the practicality and need for transportation controls on materials whose potential release during or incident to transportation may result in an unreasonable risk to property, the environment, or to human health and safety as has been determined through exposure in the work place or exposure by environmental accumulation.

This action is in response to recommendations from other organizations who have expressed a desire for the MTB to take more effective steps to deal with unregulated materials.

Comments by: March 14, 1977.

Addressed to: Docket Section, Office of Hazardous Materials Operations, Department of Transportation, Washington, D.C. 20590. Comments should reference Docket No. HM-145. It is requested that comments be submitted in five copies.

#### BACKGROUND

A number of public and private organizations and environmental agencies have expressed to MTB the view that the MTB should consider establishing transportation controls to deal with materials which are not regulated or are only partially regulated by the U.S. Department of Transportation's (DOT) HMR, transportation of which may pose certain hazards that the DOT previously has not formally recognized. The Natural Resources Defense Council, the General Electric Company, the National Tank Truck Carriers, the National Maritime Safety Association, the U.S. Environmental Protection Agency (EPA), and the Occupational Health and Safety Administration (OSHA) of the Department of Labor have expressed various concerns with the transportation of materials that may cause or contribute to the incidence of cancer, birth defects, genetic changes, environmental damage, and other effects, some poorly understood, and which in the past have been regulated, if at all, primarily because of other more easily recognized hazard characteristics. Such materials are referred to herein as "environmental and health effects materials." The MTB is considering the development of rules to

deal with the transportation of a variety of environmental and health effects materials, to incorporate a systematic approach to identification of the kinds of hazards that might require attention, identification of materials that pose such hazards, and evaluation of the appropriateness of regulating such materials in transportation. Any such action would be based on Section 104 of the Hazardous Materials Transportation Act of 1974 (Pub. L. 93-633, 88 Stat. 2156) which authorizes the Secretary of Transportation to designate as a hazardous material any material the transportation of which in a particular quantity and form "may pose an unreasonable risk to health and safety or property \* \* \*"

#### EXISTING DOT REGULATIONS

Historically, the DOT has established its regulatory control upon properties of materials that pose a significant potential hazard to humans from acute exposures. The program to minimize this hazard has been primarily directed at controlling the handling of the materials and was further confined to the circumstances of the hazardous materials transportation activity. This philosophy has led to the development of a series of regulations found in Title 49 of the Code of Federal Regulations. These regulations define the classes of hazardous materials and list materials contained in the classes (49 CFR 172.101).

Present DOT definitions of classes of materials regulated as hazardous are found in 49 CFR Part 173. Definitions dealing primarily with toxic effects, found in Subpart H therein, include those of Poison A (§ 173.326), Poison B (§ 173.343), Irritating materials (§ 173.381), Etiologic agents (§ 173.386) and Radioactive materials (§ 173.389). The existing definitions are generally limited in scope by reliance on testing criteria that may not provide adequate consideration of the risks that transporting some materials may have on health or environmental effects. Some of these limitations in the transportation regulations can be recognized as: (a) Not listing as HMR, those materials which when directly exposed to man over a prolonged period of time (month to years) effect his health; (b) not listing as HMR, those materials which when discharged into the environment pose imminent and substantial danger to public health or welfare, including, but not limited to, fish, shellfish, wildlife, shorelines and beaches, or (c) not listing as HMR, those materials which when found in man's food, water, or air may endanger his health. These risks have been addressed to some extent by agencies outside this Department.

#### ACTIONS OF OTHER AGENCIES

In connection with possible modification of existing MTB classification criteria, the MTB may consider partial or full adoption of criteria, and lists of ma-

terials identified thereunder, which have been developed for specific purposes by other agencies. This approach has been employed in this Department's definition of etiologic agents, 49 CFR 173.386, which rely on identification of such agents by the Department of Health, Education, and Welfare.

The EPA has proposed rules under section 311 of the Federal Water Pollution Control Act (33 U.S.C. 1321) which identify 306 materials as hazardous substances, based upon their toxicity to aquatic, mammalian, and plant organisms, as well as their potential for entering the navigable waters of the United States (see Appendix A).

The OSHA of the Department of Labor has published a list of materials it considers to be human carcinogens (see Appendix B). The selection criteria used recognizes effects of chronic occupational exposure which may be quite remote in time from the onset of exposure. OSHA has also proposed rules governing occupational exposure to asbestos (see Appendix B), which would include controls on asbestos handling incident to transportation. The Inter-governmental Maritime Consultative Organization is actively concerned with possible hazards associated with health effects of asbestos particles released during transportation.

The Organization for Economic Cooperation and Development has issued a decision of the Council on Protection of the Environment by Control of Polychlorinated Biphenyls (PCB's), which was adopted at its 315th meeting in Paris, France, February 13, 1973, and which recommended that member countries require labeling and specification packaging for the transport of PCB's. Both the EPA and the U.S. Department of State have indicated concern over the health effects of these materials founded, in part, upon the PCB's levels found in the fisheries of the Great Lakes, certain foodstuffs, and in the milk fat of nursing mothers in several States. In Section 6 of the Toxic Substances Control Act (Pub. L. 94-469, October 11, 1976) Congress has directed EPA to prescribe methods of marking and disposal of PCB's and has completely banned manufacture and distribution of these materials within two and one-half years of the effective date of the Act, subject to exception by the EPA Administrator.

#### LEGISLATION

Additional mechanisms, either existing or in development, which address health or environmental effects of various materials, may exist at both the Federal and State level. Such programs as can be identified may be considered by the MTB in evaluating any action it may take. State programs pertaining to the transportation of materials called hazardous wastes are of particular interest.

Recent Federal legislation includes the previously mentioned Toxic Substances Control Act which provides EPA

with authorization to require pre-market evaluation of new chemicals, as well as evaluation of some presently known materials. Although full implementation of this Act by EPA is some time off, activities of EPA and industries regulated under the Act may provide a great deal of information concerning environmental and health effects materials.

Title III of the Resources Conservation and Recovery Act of 1976 (Pub. L. 94-580, October 21, 1976) directs the EPA Administrator to develop criteria for identifying hazardous wastes and a list of such wastes to be subject to EPA regulatory control. Any proposed or existing hazardous waste transportation control activities using specific packaging, labeling, and shipping documents are of interest in the MTB's evaluation of environmental and health effects materials.

#### REQUEST FOR COMMENT

To assist the MTB in its examination of the possible need for further identification and control of environmental and health effects materials moving in commerce, comments on the following subjects would be useful:

1. Whether or not additional regulation of environmental and health effects materials in transportation is needed and why. If so,

2. What sort of human health effects should be considered.

3. What sort of environmental effects should be considered.

4. What criteria should be used to ascertain effects and identify materials. The MTB is concerned that duplication of research efforts carried out by other agencies be avoided as far as possible and is interested in the suitability of considering lists of materials identified by other agencies as having adverse environmental or health effects.

5. Whether modifications to existing DOT hazardous material classifications, or establishment of new classes, would best accommodate the identified environmental and health effects materials.

6. What sort of transportation controls may be needed for identified environmental and health effects materials. Presently available controls include specification of the physical containment necessary for transportation of a hazardous material, as well as systems to insure adequate communication of information on the material and its hazards to persons handling the material while it is in transportation or in storage incidental to transportation and to persons responding to an emergency. Degree of control generally reflects the intensity of a given hazard. Should packaging controls be necessary, performance standards rather than specification standards may be considered.

7. With regard to hazardous waste, what classification system may be used to clearly identify mixtures as opposed to single compound materials; what packagings may be appropriate for transportation; and how existing transportation documentation can be used to cover transport of hazardous wastes from the generator (shipper) to the disposer (consignee).

8. Should new or additional transportation controls be necessary, what the impact on affected industries may be, and what a reasonable implementation

schedule would be. The MTB is specifically concerned with avoiding costs which are not essential to the maintenance of transportation safety, and obtaining cost data to determine whether an inflation impact statement will be required.

9. Should new or additional transportation controls be necessary, whether the preparation of an environmental impact statement will be required.

10. Any other matters relevant to the identification and control in transportation of environmental and health effects materials, or to the need therefore, including the need for uniformity in the applicability of such safety regulations as might be developed under this docket to the various modes of transportation.

#### PROGRAM PLAN

If rulemaking is determined appropriate, under this docket, the MTB may consider a limited revision of the hazard classification; develop a list of substances; and provide a discussion for the basis of their selection. In addition, this effort may include consideration of regulatory requirements pertaining to communications, packaging, handling, and personnel training.

The MTB will be reviewing any comments received to answer questions outlined above and with a view to establishing selection criteria and rationale which would indicate specifically: (a) What types of toxicological data are meaningful; (b) in what context should these data be used; and (c) what degree of risk may be viewed as acceptable under what given conditions. Certain testing requirements may be established by the MTB to address: (a) The potential biological threat of a material; and (b) the probable occurrence of that threat during transportation.

The materials included in the EPA Hazardous Substances List and the OSHA list of carcinogenic chemicals, which are not presently regulated by the MTB in the Code of Federal Regulations, Title 49, are contained in Appendix A and B of this advance notice. These lists are provided as example lists of materials only and interested parties may wish to include in their comments specific reference to these listed materials as appropriate.

If sufficient interest is expressed in comments, an informal hearing on this subject will be held in Washington, D.C., no earlier than February 7, 1977. The time, location, and agenda of the hearing, if required, will be published in the FEDERAL REGISTER.

(49 U.S.C. 1803, 1804, 1808; 49 CFR 1.53 (e) and paragraph (a) (4) of Appendix A to Part 102)

Issued in Washington, D.C., on December 6, 1976.

DR. C. H. THOMPSON,  
Acting Director, Office of Hazardous Materials Operations.

#### APPENDIX A—U.S. ENVIRONMENTAL PROTECTION AGENCY PROPOSED HAZARDOUS SUBSTANCES

(40 FR 59960—December 30, 1975)

MATERIALS NOT SPECIFIED BY U.S. DOT 49 CFR 172.101

NOTE: \*Means Materials not Regulated in all Transport Modes.

COMMON NAME	
Adiponitrile	Ammonium fluoborate
Aluminum sulfate	Ammonium hypophosphite
Ammonium acetate	Ammonium iodide
Ammonium benzoate	Ammonium oxalate
Ammonium bicarbonate	Ammonium pentaborate
Ammonium bisulfite	Ammonium persulfate
Ammonium bromide	Ammonium silicofluoride
Ammonium carbamate	Ammonium sulfamate
Ammonium carbonate	Ammonium sulfate
Ammonium chloride	Ammonium tartrate
Ammonium citrate, dibasic	

#### COMMON NAME—continued

Ammonium thiocyanate	Endrin
Ammonium thiosulfate	Ethion
Antimony potassium tartrate*	Ethylendiaminetetraacetic acid
Antimony tribromide	Aluminum fluoride
Antimony trifluoride	Ammonium biftuoride*
Antimony trioxide	Ammonium fluoride
Arsenic disulfide	Sodium biftuoride
Arsenic trisulfide	Sodium fluoride*
Benzoic acid	Stannous fluoride
Benzonitrile	Fumaric acid
Beryllium chloride	Guthion
Beryllium fluoride	Heptachlor
Beryllium nitrate	Hydroxylamine
Cadmium acetate	Ferric ammonium citrate
Cadmium bromide	Ferric ammonium oxalate
Cadmium chloride	Ferric chloride*
Calcium hydroxide	Ferric fluoride
Calcium oxide*	Ferric nitrate
Captan	Ferric sulfate
Carbaryl*	Ferrous ammonium sulfate
Chlordane	Ferrous chloride
Chloroform*	Ferrous sulfate
Ammonium chromate	Kelthane
Calcium chromate	Lead acetate
Chromic acetate	Lead fluoborate
Chromic sulfate	Lead fluoride
Chromous chloride	Lead iodide
Lithium bichromate	Lead stearate
Lithium chromate	Lead sulfide
Potassium chromate	Lead tetraacetate
Sodium bichromate	Lead thiocyanate
Sodium chromate	Lead thiosulfate
Strontium chromate	Lead tungstate
Zinc bichromate	Lindane*
Cobaltous bromide	Malathion*
Cobaltous fluoride	Maleic acid
Cobaltous formate	Maleic anhydride
Cobaltous sulfamate	Mercuric nitrate
Cupric acetate	Methoxychlor
Cupric chloride*	Mevinphos
Cupric formate	Naled
Cupric glycinate	Naphthenic acid
Cupric lactate	Nickel ammonium sulfate
Cupric nitrate	Nickel formate
Cupric oxalate	Nickel hydroxide
Cupric subacetate	Nickel nitrate
Cupric sulfate	Nickel sulfate
Cupric sulfate, ammoniated	Nitrophenol
Cupric tartrate	Paraformaldehyde
Cuprous bromide*	Pentachlorephenol
Coumaphos	Polychlorinated biphenyls
Cresol	Propyl alcohol
Cyanogen chloride	Pyrethrins
2,4-D (acid or esters)*	Quinoline
Dalapon	Resorcinol
DDT*	Selenium oxide
Dicamba	Sodium bisulfite*
Dichlobenil	Sodium selenite
Dichione	Sodium hydrosulfide
Dichlorvos	Sodium hypochlorite
Dieldrin	Sodium phosphate, dibasic
Diquat	Sodium phosphate, monobasic
Disulfoton	Sodium phosphotribasic
Diuron	Styrene
Dodecylbenzenesulfonic acid	2,4,5-T (acid)
Dodecylbenzenesulfonic acid, calcium salt	2,4,5-T (esters)

Dodecylbenzenesulfonic acid, isopropanolamine salt	Trichlorfon
Dodecylbenzenesulfonic acid, sodium salt	TDE
Dodecylbenzenesulfonic acid, triethanolamine salt	Toxaphene*
Dursban	Trichlorophenol
Endosulfan	Uranium peroxide
	Uranyl acetate
	Uranyl sulfate
	Vanadium pentoxide
	Vanadyl sulfate
	Xylenol
	Zectran

## COMMON NAME—Continued

Zinc acetate	Zinc potassium chromate
Zinc ammonium chloride	Zinc silicofluoride
Zinc borate	Zinc sulfate
Zinc bromide	Zinc sulfate, monohydrate
Zinc carbonate	Zirconium acetate
Zinc fluoride	Zirconium nitrate
Zinc formate	Zirconium potassium, fluoride
Zinc hydrosulfite	Zirconium oxychloride
Zinc nitrate	Zirconium sulfate
Zinc phenolsulfonate	
Zinc phosphide	

APPENDIX B—U.S. DEPARTMENT OF LABOR  
OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION

## CANCER SUSPECT AGENTS

(29 CFR 1910.1003 through 1910.1016, except 1910.1005)

MATERIALS NOT SPECIFIED BY DOT 49 CFR 172.101

## CHEMICAL NAME

Acetylaminofluorene	4-Nitrobiphenyl
Aminodiphenyl	N-Nitrosodimethylamine
Benzidine	beta-Propiolactone
3,3'-Dichlorobenzidine (and its salts)	bis-Chloromethyl ether
4-Dimethylaminoazobenzene	Methyl chloromethyl ether
alpha-Naphthylamine	Ethyleneimine
beta-Naphthylamine	

## PROPOSED CANCER HAZARD

(40 FR 47652—October 9, 1975)

MATERIALS NOT SPECIFIED BY DOT 49 CFR 172.101

*asbestos*, or chrysotile, amosite, crocidolite, tremolite anthophyllite, actinolite

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